

September 28, 1946.

Dear Dr. Kauffmann:

Since the symposium at Cold Spring Harbour, where I had the pleasure of conferring with you, I have begun to apply myself to the problem of the inheritance of factors in Salmonella. This is especially desirable since the research that has been carried further on *Escherichia coli* in this laboratory has confirmed the conclusions which were announced at the Symposium, and supports the occurrence in some strains of a sexual recombination process.

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In preparation for the study of Salmonella, I have undertaken a review of the nutrition of the group. Your book on the Bakteriologie der Salmonella-Gruppe was not at first available, so that much of this was done before I encountered references to your work and that of Hahn and Hermann. About 150 various Salmonella strains have been examined and most were found to grow on minimal medium (i.e. were prototrophic, or 'ammonschweich'). There is some variation within a given serotype- for example one para A strain requires tryptophan, while others do not; one cholera suis strain requires methionine; most others are prototrophic. This is in general agreement with your observations.

It would be very interesting to study the nutrition of 'ammonschweich' strains in more detail. I would appreciate it very much if you could send me a collection of various strains which you have reported on as incapable of growth on minimal medium (e.g. Simmons' glucose agar.) However, I am already well supplied with S. pullorum and S. gallinarum, so please do not trouble with these. I should be particularly interested in comparing different isolations of the same serological type.

Our examination of the stability of nutritional requirements of *E. coli*, and of Salmonellae leads us to a conclusion similar to your own on their utility in classification. Nutritional typing might be useful in distinguishing substrains of a given type, but not as a consistent means of differentiating different types.

Your cooperation in this matter would be greatly appreciated. I should be grateful also for reprints of any publications dealing with this aspect of the Salmonella in particular, and on the problem of antigenic variations in general.

With best regards from my associates,

Sincerely yours,

Joshua Lederberg.